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JUNE, 1982

FINAL REPORT

TOPICAL BIBLIOGRAPHIES
OF
WATER RESOURCES LITERATURE

Volume 6

LITERATURE AND DATA SEARCH OF WATER RESOURCE INFORMATION OF THE COLORADO, UTAH, AND WYOMING OIL SHALE BASINS

LEWIN AND ASSOCIATES, INC.
Denver, Colorado Washington, D.C.

BUREAU OF LAND MANAGEMENT

Contract YA-553-CT1-1093

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TOPICAL BIBLIOGRAPHIES OF WATER RESOURCES LITERATURE

Volume 6

Developed By
Lewin and Associates, Inc.
Denver, Colorado Washington, D.C.

For The
Colorado State Office
Bureau Of Land Management
U. S. Department Of Interior
Denver, Colorado

Contract No. YA-553-CT1-1093

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LIST OF VOLUMES

Volume 1: Users' Guide

Volume 2: Bibliography of Water Resources Literature

Volume 3: Bibliography of Water Resources Literature

Volume 4: Bibliography of Water Resources Literature

Volume 5: Bibliography of Water Resources Literature

Volume 6: Topical Bibliography of Water Resources Literature

Volume 7: Listing of Personnel and Agencies

Volume 8: Colorado Data Compilations

Volume 9: Utah Data Compilations

Volume 10: Wyoming I Data Compilations

Volume 11: Wyoming II Data Compilations

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TOPICAL BIBLIOGRAPHY

INTRODUCTION

The 27 key categories have been used to develop 54 Topical Bibliographies which consist of references which have common groups of key categories. The references in each topical bibliography are arranged alphabetically by primary author. In order to save space only the accession numbers of references are listed. Forty two of the topical bibliographies are derived by identifying references in the following fourteen categories for each of the three states, Colorado, Utah and Wyoming:

Surface water quality	Springs
Surface water quantity	Floods
Groundwater quality	Sediment
Groundwater quantity	Salinity
Available Water by Basin	Subsidence
Present Water Use	Computer Models
Water Law	Climate

The remaining twelve topical bibliographies are not regionally specific, but deal with oil shale processes and broad topical categories:

Surface retort effluents	In-situ retort effluents
Surface retort leaching	In-situ retort leaching
Surface retort water use	In-situ retort water use
Surface retort reclamation	In-situ retort reclamation
Environmental studies	Computer models
Bibliographies	Proceedings

An expanded definition of each key-word category is contained in the following exhibit:

DESCRIPTION OF KEY-WORD CATEGORIES

SITE SPECIFIC

Surface Water Quantity
tabulations, statistical analyses and interpretations of streamflow data; hydrographs; stockponds and other storage facilities

Surface Water Quality
tabulations, statistical analyses, and interpretations of physical and chemical water quality data

Groundwater Quantity
tabulations, statistical analyses, and interpretation of groundwater quantity data; base flow, aquifer properties and extent, flow velocities and direction; well listings

Groundwater Quality
tabulations, statistical analyses, and interpretations of groundwater quality information

Water Law
water law, water rights, environmental law and regulations, water politics

Available Water by Basin
water supply, natural flows, water resource developments; USBR planning and feasibility reports are included here.

Present Water Use
all present water uses (domestic, municipal, industrial, agricultural, mining, etc)

Springs
tabulations and interpretations of water quality and quantity information for springs; includes listings of spring locations

Floods
floodplains, flood statistics, flood studies

Sediment
erosion, fluvial processes, physical and chemical sediment characterization

Salinity
salinity of the Colorado River including assessment and control

Computer models
: hand, desk-top calculator, and mainframe computer analytical techniques to simulate water movement and solute transport in aquifers, streams, and spent shale piles

Climate
: conventional meteorological parameters, statistical analyses and tabulations

Subsidence
: stability of in-situ retorts and underground and surface oil shale mines

RETORTING PROCESS SPECIFIC

Process Water Use
: gross and net water requirements for oil shale processing (retorting, reclamation, dust control, cooling water, etc.)

Leaching
: chemical and physical characterization of leachates from surface disposal piles and abandoned in-situ retorts, kinetic and other fundamental studies

Reclamation
: reclamation of surface spent shale disposal piles including revegetation, irrigation, intentional leaching, pile drainage facilities, etc; abandonment of in-situ retorts including in-situ grouting, spent shale grouts, hydraulic barriers, etc.

Effluents
: effluent chemical and physical characterization; wastewater treatment

GENERAL

Proceedings
: proceedings of conferences that relate to any of the above key words

Environmental
: environmental assessment of all types of facilities that are located in the study area, including coal mines, pipelines, and oil shale plants; environmental monitoring plans

Bibliographies
: compilations of references and abstracts by others on any topic included in this Table; computerized or other data bases.

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193
194
289
397
401
404
405.1
412
417.3
462
485
523.2
597
599
626.3
732.1
794.4
803.2
846

UTAH
FLOODS

138
197
205
206
208
350.2
352.3
352.6
352.7
352.8
493
495.4
524
605.1
628
874

UTAH
PRESENT WATER USE

101
105
117.1
117.2
143
161
185.3
187
187.1
187.2
191
192.1
193
194
195
253.2
254
264
268.1
295
303.1
309
329
353.1
357
383
431
432
438
459
461.1
464.1
468
470
478
479
481
485
496.1
499
500
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513.3
591
608
612
613
636.1
640
642
714.1
724.2
746.2
751.2
793
794.5
794.6
794.7
794.9
795.1
796
798
801
813
813.1
813.2
813.3
813.4
813.5
813.6
838

105
117.1
138.2
142.2
191
193
194
195
249.1
254.2
269
270
284.1
300
317
318
319
320
333.1
344.2
417.1
420
431
437
444
452
453.3
470.3
472
473
474
478
492.1
495
496.2
507.1
522.1
547.3
548
548.2
549
589
591
604
610
613
621
737.1
756
757.1
772.3
773
791
794.2
794.3
795.2
797
798
799
800
801
817

UTAH
SALINITY

117
136
137
138.1
138.2
144
146
155.3
180
186
188
188.1
191
192
193
194
201
203
203.1
251
252
254.1
259.3
268.1
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270
270.1
284.1
326
344.2
345.1
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349
440
444
453.1
462
464.1
464.2
468.2
473.3
475
475.1
476
488
495
509
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513.2
514.3
514.4
544.2
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587.2
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602
635.2
636.2
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648.1
653.1
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663.1
665.2
665.3
732.1
733
737.1
746.1
746.2
756
784.17
791
792
795.1
801
802
802.3
803.1
812
814
819.1
870
871

UTAH

CLIMATE

121		665	
130		721	Y, u
142		724.1	
206		748	
208.1		751.3	Y, u
241.1		752	
242		754	
287		777	
288		794.6	
289		798	
300.1		802.2	
351.1		803.2	
361		804	Y, u
362		816.2	
366.3		816.3	
391		816.4	
391		829	
392		840	
393		844	
418		846	
441.1		847	
466		848	
467		849	
468.1		850	
479		851	
481		852	
494		853	
495.1		855	
495.2		856	
515	Y, u	857	
523.2	[redacted] –	858	Y, u
538		859	
547.2	[redacted] –	859.1	
564		860	
597		861	
605.2	Y, u		
605.3			
606			
607	Y, u		
607.1			
607.2			
607.3			
612	[redacted] –		
622.1			
641	Y, u		
654.1			
664	Y, u		

Y = Hit

u = useable

N = Not-useable

UTAH
COMPUTER MODELS

143
155
188.2
247.1
253.2
254
254.1
297.2
298.1
303.1
321.1
321.2
330.1
407.1
417.3
425
425.2
425.3
451.1
458.1
464.2
468.2
470.1
470.2
470.4
473.3
475.1
488.1
493.2
497
498
500
507
513.2
568.1
586
586.1
594
602
635.2
638.1
653.1
661
663.1
723
756.2
774.1
774.2
784.17
819.1
837.1

740

WYOMING SURFACE WATER QUANTITY

102
103
105
110.1
111
117.4
117.5
133
151
155
186.2
210
213
214
247.1
254.1
297.3
298
298.1
340
368
396
398
399
403
407.1
408
408.1
409
409.2
410
419
424.2
464.2
470.4
479
481
485
492.1
493.2
513.2
532
532.1
534
535
536
542
586.1
605.1
614
617.2
628
652.2
653
670
710
711
723
729.1
732
742
743
745
763.1
776
784.17
792
808
813.7
831
837.1
880.1
881
883
886.1

WYOMING
SURFACE WATER QUALITY

102
142.2
149
150
151
152
186.2
191
193
194
210
250.4
282
312
312
312.1
340
342
342.2
343.1
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408.1
409.1
409.2
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419
424.2
425.2
463
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532.1
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587.2
729.1
732
745
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802
835
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837.1
841
870
883

WYOMING
GROUNDWATER QUANTITY

105
109
110
126
127
128
186.2
210
259
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406.1
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408.1
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409.2
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423.1
424.2
458.1
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493.2
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532.1
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661
671
672
729.1
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763
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880.1
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888

WYOMING
GROUNDWATER QUALITY

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WYOMING
SPRINGS

259
312
419
732
831
832

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WYOMING
AVAILABLE WATER BY BASIN

101
118.2
118.3
143.1
174
185.1
186.1
186.3
190.1
191
193
194
196.1
196.2
197
253.1
264
284.1
306.1
308.1
352.1
353.1
431
447.2
478
479
481
485
492
496.1
506.1
510.3
601.2
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642
657
741
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751.2
772.3
782
782.1
813.1
813.2
813.3
813.4
813.5
813.6
813.8
875
880.2
880.3
882
883
885
885.1

WYOMING
SEDIMENT

107
117.4
117.5
118
191
192
193
194
396
398
403
408
408.1
409.2
485
535
626.3
670
732.1

WYOMING
FLOODS

197
208
214
298
352.5
605.1
628

WYOMING
PRESENT WATER USE

101
105
107
110
143.1
174
186.1
186.3
190.1
191
193
194
196.1
196.2
197
259
264
268.1
282
303.1
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329
352.1
353.1
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431
464.1
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636.1
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751.2
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880.2
880.3
882
883
885
885.1

105
138.2
142.2
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249.1
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254.2
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284.1
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320
333.1
344.2
417.1
420
431
437
444
452
453.3
470.3
472
474
478
492.1
495
501
522.1
547.3
549
589
591
604
610
614
621
737.1
756
757.1
772.3
773
791
817
880
880.1
884

WYOMING
SALINITY

107
117
136
137
138.2
144
146
180
186
188
191
192
193
194
201
254.1
259.3
268.1
269
270
270.1
284.1
312.1
313
326
344.2
345.1
346
349
440
444
453.1
464.1
464.2
473
475
475.1
476
495
509
510
513.2
514.4
545
549
584.3
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587.1
587.2
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648.1
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663.1
732.1
733
737.1
756
784.17
791
792
802
802.3
803.1
812
814
819.1
870
871

WYOMING
WYOMING CLIMATE

106
135
135.1
172
186.2
208.1
242
418
419
441.1
441.2
479
481
605.2
605.3
606
607
607.1
607.2
607.3
632
653
654.1
724.1
732
748
816.2
816.3
816.4
829
886

WYOMING
COMPUTER MODELS

102
110.1
133
155
247.1
254.1
297.2
298.1
303.1
313
321.1
330.1
407.1
425.2
458.1
464.2
470.4
473.3
475.1
493.2
513.2
568.1
586
586.1
594
652.2
661
663.1
723
742
744
745
774.1
774.2
784.17
819.1
837.1

WYOMING
SUBSIDENCE

Not found in the state of Wyoming.

SURFACE
PROCESS WATER USE

104.1
104.2
125
142.2
157
160
160.1
170
181
191
193
194
195
248
260
290
308.1
309
331
350
366.1
422
422.1
449
506.1
569.1
621
625
646
647
657
702
704
714.2
740.1
751
751.1
772.3
783.1
784.3
784.7
784.11
784.13
794.4
876
878

SURFACE EFFLUENTS

104.2	426
108	449
113.1	451
130.1	453.2
130.2	465
131.1	490
132.2	510.1
132.3	515.2
132.4	515.3
132.5	560
137.1	579
137.2	580
159	585
160	593
160.1	603
170	617.1
181	621
231	625
243	644
244	666
245	668
246	699
247	702
248	703
259.1	704
259.2	712.1
260	715
263.1	735
292	740.1
297.1	750.1
310	765.1
333	772.1
333.2	772.3
334.1	784.7
336	784.11
337	784.13
338	844
366.1	845
373	865
380	887.1
382	
385	
386	
387	
388	
389.2	

SURFACE
LEACHING

101.1
113.1
130.1
130.3
130.4
132
132.1
132.4
132.5
137.1
137.2
154.1
157
181
211
243
244
245
246
247
251
252
260
263
293
297.1
303
320.2
321
333
374.1
384
385
386
387
388
421
433
434
442
447
453.2
455
490
504
505
506
515.2
515.3
539
540
545
561
572
573
585
603
625
644
648.1
652
659
667
704
712.1
715
716
717
718
719
722
722.1
723
725
726
727
728
729
737.2
740
764
764.1
765
765.1
772.2
789
810
811
819
866
868

SURFACE
RECLAMATION

104.1
124
128.1
144.3
181
243
246
247
253
260
263
289.1
290
291
300.2
310
329.1
336
379
447
447.1
455
504
505
506
515.2
515.3
544.1
570.2
584
584.1
604
617
625
658
660
665.1
699
702
703
704
708
712.2
715
725
734
734.1
783.1
787
844
845
852
856
858
859
859.1
860
861
878
879

IN-SITU
PROCESS WATER USE

156.1
157
160
160.1
230
233
308.1
422.1
449
484.1
531
621
646
657
696
697
698
714
740.1
772.3
781
781.1
784.4
784.13

IN-SITU
EFFLUENTS

108
113.1
116.1
130.1
130.2
131.1
132.2
132.3
132.4
132.5
132.6
132.7
137.1
137.2
137.3
144.1
160
223.1
230
233
310
320.1
322
333.2
334
334.1
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337.2
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352
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365
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369.1
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372
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389.2
390
426.1
435
436
448
449
450
450.1
451
452.1
452.2
453.2
465
469
473.1
489
490
510.1
515.2
515.3
519.1
519.4
521
525
528
529.1
546
547
547.1
560
568.2
579.1
580
580.1
581
581.1
582
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612.2
612.3
617.1
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631.1
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772.1
772.3
783
784.4
784.10
784.13
809
816.1
832.1
833
834
873
887
887.1
887.2

IN-SITU
LEACHING

113.1
114
115
115.1
116
130.1
132.1
132.5
137.1
137.2
139
157
252
314
334
366.2
369.1
371
376
424.2
427
429
453.2
489
490
511
512.1
515.2
515.3
521
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618
625.1
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633.1
635
652
675
705
715
739.1
772.2
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807
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816.1
819
887.2

IN-SITU
RECLAMATION

310
336
391
392
393
473.1
473.2
515.2
515.3
529
616
622.1
633.1
633.2
675
677
699
715
815.1

ENVIRONMENTAL

105
113.1
118.1
130.1
131
132.1
132.8
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142.1
155.1
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158.1
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160.1
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169.1
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332.1
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682.1
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720
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842.1
842.2
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842.4
842.5
843
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863
887.1
887.2

PROCEEDINGS

113.1
254.1
270.2
271
272
273
274
275
276
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279
285
298.2
334.1
337
338
342.1
420
425.1
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601
635.1
751.2
791.1
799
801

BIBLIOGRAPHIES

155.1
280.1
281
329.1
332
332.2
335
339
344
376
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430
468.1
514
522.1
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570.1
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COMPUTER MODELS

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104.1
110.1
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132.7
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